

REMARKS

Applicants thank the Examiner for the thorough examination of this application.

Claims 1-14 are now present in the Application. Claims 1, 7 and 14 are independent. Reconsideration of this Application is respectfully requested.

Allowed Claims 7-14

The Examiner states that claims 7-14 are allowed. Applicants appreciate the Examiner's early indication of allowable subject matter in this application.

Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Information Disclosure Citation

Applicants thank the Examiner for considering the reference supplied with the Information Disclosure Statement filed January 14, 2004, and for providing Applicants with an initialed copy of the PTO-1449 form filed therewith.

Drawings

The Office Action indicates that the drawings are accepted by the Examiner. However, Applicants have not received a Notice of Draftsperson's Patent Drawing Review PTO-948 indicating whether or not the formal drawings have been approved by the Draftsperson. Since no objection has been received, Applicants assume that the drawings are acceptable and that no further action is necessary. Confirmation thereof in the next Office Action is respectfully requested.

Rejection Under 35 U.S.C. § 102(e)

Claims 1-6 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,795,121 to Gates. This rejection is respectfully traversed.

Independent claim 1 recites a combination of steps in a method of manufacturing a thin film transistor device, including forming a copper alloy line on said substrate, said copper alloy line including a concentration y of magnesium, and said copper alloy line having a thickness t, wherein the concentration y of magnesium in relation to the thickness t of said copper alloy line is

$$y \leq \frac{94}{t}$$

and heat-treating said copper alloy line in an oxygen atmosphere.

Applicants respectfully submit that this combination of elements as set forth in

independent claim 1 is not disclosed or made obvious by the prior art of record, including Gates.

The Examiner states that Gates teaches the Applicants' invention as claimed in claim 1. The Applicants respectfully disagree.

The Applicants submit that Gates discloses three structures which could be formed of a copper alloy, namely, gate electrodes 56, 76 and 96. However, Gates fails to specify a thickness t of gate electrodes 56, 76 or 96. Gates also fails to specify a quantity of magnesium in either of these gate electrodes. Without specific quantities t and y , the Applicants' claimed inequality cannot be solved. With respect to this deficiency, Gates fails at the outset. The rejection under 35 U.S.C. 102 is improper.

Still further, Gates discloses only two structures which are likely to contain magnesium. Gate electrodes 56, 76 and 96 are not among these structures. The only structures disclosed in Gates which are likely to contain magnesium are contact layers 64 and 106. However, contact layers 64 and 106 do not contain copper. Therefore, on this basis alone, Gates fails, and the rejection under 35 U.S.C. § 102 is improper.

In order to anticipate the Applicants' claimed combination, it is required that a thickness t of copper and concentration y of magnesium are known. It is also required that the known quantities t and y satisfy the Applicants' claimed inequality. Gates fails on both requirements.

Applicants therefore respectfully submit that the combination of elements as set forth in independent claim 1 is not disclosed or made obvious by the prior art of

record, including Gates, for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to dependent claims 2-6, Applicants submit that claims 2-6 depend, either directly or indirectly, from independent claim 1, which is allowable for the reasons set forth above, and therefore claims 2-6 are allowable based on their dependence from claim 1. Reconsideration and allowance thereof are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Percy L. Square, Registration No. 51,084, at (703) 205-8034, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

Application No.: 10/756,378
Art Unit: 2818

Attorney Docket No. 3430-0199P
Request filed March 15, 2005
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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